



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/723,816 | 11/28/2000 | Barry Reginald Hobson | 71386-6 | 6414 |

20915 7590 03/25/2003

MCGARRY BAIR PC
171 MONROE AVENUE, N.W.
SUITE 600
GRAND RAPIDS, MI 49503

EXAMINER

JONES, JUDSON

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/723,816

Applicant(s)

HOBSON ET AL.

Examiner

Judson H. Jones

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 57-59, 65-67, 71 and 72 is/are allowed.
- 6) ☒ Claim(s) 19, 22, 25, 27, 39, 40, 44, 45, 50, 63, 64 and 68-70 is/are rejected.
- 7) ☐ Claim(s) 20, 21, 23, 24, 26, 28-38, 41-43, 46-49, 51-56 and 60-62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/196,274.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 19, 22, 25, 27, 39, 40, 44, 45, 50, 63, 64, 69 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Hollis, Jr. 5,153,494 A. Hollis, Jr. discloses a magnet with lines of flux extending through an air gap as described in column 5 lines 17-10, a support 70 with current carrying paths 76 as shown in figure 2 with the sides of the coils extending beyond the support viewed as having a circumferential aspect wherein the support is capable of two dimensional motion in a plane as described in column 4 lines 60-63. While Applicant argues that segments 76 are not disposed in and do not extend across lines of magnetic flux, segments 76 are rectangular coils. The ends of segments 76 do not extend across lines of magnetic flux but the sides of segments 76 do. Applicant also argues that the forces generated in Hollis act with a moment arm to generate a torque. According to Hollis, column 3 lines 6-16, "The electro-dynamic stage of this invention not only moves in the X and Y direction, but also rotates ...". This meets the claim language of "a support capable of at least two dimensional motion."

In regard to claim 40, see Hollis, Jr. column 6 lines 18-20 and column 7 lines 46-49.

In regard to claim 22, see Hollis, Jr. figure 2, where the side of the magnet closest to the movable piece 70 is viewed as being the innermost side of the magnet.

In regard to claims 25, 45, 69 and 70, see Hollis, Jr. figure 2.

Art Unit: 2834

In regard to claims 27, 50 and 64, see Hollis, Jr. column 6 lines 62-66.

In regard to claim 39, see Hollis, Jr. column 4 lines 60-63 which discloses a three coil embodiment instead of the four coil embodiment shown in figure 2. Three coils equally spaced about the support would necessarily provide a first and second coil disposed at non-diametrically opposed locations.

In regard to claim 44, see Hollis, Jr. column 1 lines 43-47. Since the device is designed to move a limited distance, the segment would inherently stay under the influence of the magnetic flux through the relative motion.

In regard to claim 63, see Hollis, Jr. column 2 lines 6-9, column 6 lines 2-12 and column 6 lines 62-68. Beyond saying that an analog or digital controller controls the current to the motors, Hollis, Jr. does not specify AC or DC in his own device. However there is no mention in Hollis, Jr. about phases of the current and therefore no indication that Hollis, Jr. uses anything other than the power supply of the prior art devices.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hollis, Jr. in view of Van Patten et al. Hollis, Jr. discloses the electric machine but does not disclose providing AC current to the machine. However Van Patten et al. teaches in column 1 lines 10-30 that both AC and DC motors have strengths and weaknesses. DC motors are easier to control but are more

Art Unit: 2834

expensive to make and to operate. AC motors are more reliable. Van Patten et al. proposes to modify AC motor control in order to make AC motors work more like DC motors as described in column 2 line 42 to column 3 line 26. Since Van Patten et al. and Hollis, Jr. are from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized a sophisticated motor control circuit for an AC motor in order to use an AC motor in place of a DC motor and thus improve the reliability of the machine.

Allowable Subject Matter

Claims 20, 21, 23, 24, 26, 28-38, 41-43, 46-49, 51-56 and 60-62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 57-59, 65-67, 71 and 72 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or teach magnets configured to define a space to provide access to both the top and bottom surfaces of a support in combination with the other limitations of claim 20. The prior art of record does not disclose or teach a magnet in the form of a closed loop in combination with the other features of claim 21. In regard to claim 23, the prior art of record does not disclose or teach a magnet with the outermost side having an air gap in combination with the other features of this claim. In regard to claims 24 and 43, single turn conductive coils are known in the art and multiple coils each carrying a single phase of current are also known in the art. However combining those features with the other features of these claims is not obvious. In regard to claims 26 and 46, the prior art of record does not disclose or teach a support having a central aperture in combination with the other features of these claims.

Art Unit: 2834

In regard to claims 28 and 61, the prior art of record does not disclose or teach inducing current to flow in electrically conductive paths of the support in combination with the other features of these claims. In regard to claims 31 and 53, the prior art of record does not disclose or teach a support having a plurality of apertures wherein at least one electrically conductive path is constituted by a portion of the support in combination with the other features of these claims. In regard to claims 32 and 54, the prior art of record does not disclose or teach a support made of an electrically conductive material in the form of a wheel where the spokes of the wheel are electrically conductive paths in combination with the other features of these claims. In regard to claim 35, the prior art of record does not disclose or teach a coupling to move a support in two dimensions to induce current to flow in the conductive paths in combination with the other features of this claim. In regard to claims 36 and 60, the prior art of record does not disclose or teach the number of segments equal to the number of electrical phases supplied to the support in combination with the other features of this claim. Since Hollis, Jr. uses DC for his device, there are no phases. In regard to claim 37, the prior art of record does not disclose or teach a support of electrically conductive material wherein the segments are constituted by sections of the support in combination with the other features of this claim. In regard to claim 38, the prior art of record does not disclose or teach a transformer including a primary winding and a secondary winding, said secondary winding constituted by a section of the support in combination with the other features of this claim. In regard to claim 41, the prior art of record does not disclose or teach an electric machine with a magnet having a innermost side in which is formed an air gap and an outermost side which forms a part of the magnetic flux return path of the magnet. In regard to claim 42, the prior art of record does not disclose or teach an electric machine with a magnet

Art Unit: 2834

having a outermost side in which is formed an air gap and an innermost side which forms a part of the magnetic flux return path of the magnet in combination with the other features of this claim. In regard to claim 47, three phase power supplies with each phase being 120 degrees out of phase from the other phases are known in the art. However modifying Hollis, Jr. to work with a three-phase power supply would not have been obvious. In regard to claim 51, the prior art of record does not disclose or teach an induction device in combination with the other features of this claim. The prior art of record does not disclose or teach an inductive generator where the relatively movable member of the generator moves in two dimensions of a plane in combination with the other features of claim 57. In regard to claim 65, the prior art of record does not disclose or teach a support mounted for motion in two dimensions in a plane, a magnet defining an air gap, and short circuited electrical path segments wherein forces created by currents and magnetic flux do not lie along a common line. While Hollis, Jr. discloses a support mounted for motion in two dimensions, Hollis Jr. does not disclose short-circuited windings. Short circuited windings are used in inductance or reluctance motors, but combining the short circuited windings of such a motor with Hollis, Jr. would not have been obvious to a person of ordinary skill in the art. The prior art of record does not disclose or teach each conductive path having a segment lying in a plane substantially perpendicular to a plane of support in combination with the other limitations of claim 71. In regard to claim 72, the prior art of record does not disclose or teach a support movable relative to magnets where the support has conductive paths with a segment lying in a common first plane and the support has conductive paths each path having a segment lying in a plane not parallel to the first plane and force is produced by interaction of current flowing

Application/Control Number: 09/723,816

Page 7

Art Unit: 2834

through the segments and lines of magnetic flux to produce thrust forces corresponding to the planes of the different segments.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H Jones whose telephone number is 703-308-0115. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JHJ *JHJ*
March 24, 2003

Alan M. Bayh
2003